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Mineralogical composition of the Lower and Upper Kazanian (Mid-Permian) rocks and facies distribution at the Petchischi region (Eastern Russian Platform)

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Abstract

© 2015 Springer-Verlag Berlin Heidelberg Abstract: The mineral composition proportions of carbonate rocks of Kazanian (Mid-Permian) age in the Petchischi region (eastern part of the Russian Platform) was identified by X-ray powder diffraction, ICP-MS and optical microscopy. The Lower Kazanian deposits are presented predominantly by bio-dolomicrites with changing terrigenous component and the lack of gypsum-bearing layers in the succession. Dolomicrites are prevalent in the Upper Kazanian succession, which is composed of alternation of gypsum-bearing dolomites, clayey dolomites and pure dolomites. The discovered bentonite-bearing component in marls and bentonite clays are proposed as evidence of volcanic activity in the Urals in the Kazanian stage. Two marine facies on the Eastern Russian Platform in the Kazanian: peritidal shallow flat and coastal sabkha agree well with the trends of δ18O and δ13C ratios.

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Keywords

Depositional model, Dolomite, Kazanian, Middle Permian, Russian Platform, Sabkha